What is claimed is:

1. A non-contact position sensor comprising:

a plurality of sensor elements configured in an array; each said sensor element configured to provide an output associated with each of a plurality of positions of a sensor control element relative to said position sensor, whereby a separate combination of said outputs is provided for each of said positions.

2. A sensor according to claim 1, wherein said sensor elements are configured in a linear array.

3. A sensor according to claim 2, wherein each said sensor element is configured to provide an associated output in response movement of said sensor control element along said linear array to each of said plurality of positions.

4. A sensor according to claim 2, wherein each said sensor element is configured to provide an associated output in response to movement of said sensor control element across said array to each of said plurality of positions.

5. A sensor according to claim 1, wherein said sensor elements are configured in an arcuate array.

6. A sensor according to claim 1, wherein said sensor control element comprises a magnet and said sensor elements comprise Hall effect sensors.

7. A sensor according to claim 6, said sensor further comprising a biasing magnet mounted in a fixed position adjacent at least one of said Hall effect sensors for biasing said at least one of said Hall effect sensors to a selected output.

8. A sensor according to claim 6, wherein said magnet has a generally arcuate shape.

9. A sensor according to claim 8, wherein said array is a linear array.

10. A sensor according to claim 6,wherein said magnet has a length greater than a distance between adjacent ones of said Hall effect sensors.

11. A sensor according to claim 6, wherein at least one of said Hall effect sensors comprises first and second Hall elements; each of said Hall elements providing an associated output in response to a position of said sensor control element relative to said position sensor.

12. A sensor according to claim 6, wherein said magnet is a coded magnet comprising at least one North magnetized region and at least one South magnetized region.

13. A sensor according to claim 12,wherein said coded magnet comprises adjacent ones of said at least one North magnetized region and said at least one South magnetized region.

14. A sensor according to claim 12,wherien said at least one North magnetized region and said at least one South magnetized region are configured to cause changes in said Hall effect sensor outputs at a first rate with movement of a first region of said magnet relative to said sensor and to cause changes in said Hall effect sensor outputs at a second rate greater than said first rate with movement of a second region of said magnet relative to said sensor.

15. A sensor according to claim 1, said sensor further comprising a magnet, and wherein said sensor control element comprises a shunt, said shunt being

configured to block a magnetic field of said magnet from at least one of said sensors in at least one of said positions.

16. A sensor according to claim 15, wherein said shunt has a generally arcuate shape.

17. A non-contact position sensor comprising:

a housing, a circuit board disposed in said housing, and a plurality of Hall effect sensors configured in an array on said circuit board; each said Hall effect sensor configured to provide an output associated with each of a plurality of positions a magnet relative to said position sensor, whereby a separate combination of said outputs is provided for each of said positions.

18. A sensor according to claim 17, said sensor further comprising a biasing magnet mounted in a fixed position adjacent at least one of said Hall effect sensors for biasing said at least one of said Hall effect sensors to a selected output state.

19. A sensor according to claim 17, wherein said array is a linear array.

20. A sensor according to claim 19, wherein each said Hall effect sensor is configured to provide an associated output in response movement of said magnet along said linear array to each of said plurality of positions.

21. A sensor according to claim 19, wherein each said Hall effect sensor is configured to provide an associated output in response to movement of said magnet across said linear array to each of said plurality of positions.

22. A sensor according to claim 17, wherein said array is an arcuate array.

23. A sensor according to claim 17, wherein said magnet has a generally arcuate shape.

24. A sensor according to claim 23, wherein said array is a linear array.

25. A sensor according to claim 17,wherein said magnet, said circuit board, and said housing have a generally arcuate shape.

26. A sensor according to claim 17,wherein said magnet has a length greater than a distance between adjacent ones of said Hall effect sensors.

27. A sensor according to claim 17,wherein said housing comprises a top portion having slots, each of said slots receiving an associated one of said Hall effect sensors.

28. A sensor according to claim 17,wherein said magnet is a coded magnet comprising at least one North magnetized region and at least one South magnetized region .

29. A sensor according to claim 28,wherein said coded magnet comprises adjacent ones of said at least one North magnetized region and said at least one South magnetized region.

30. A sensor according to claim 28,wherien said at least one North magnetized region and said at least one South magnetized region are configured to cause changes in said Hall effect sensor outputs at a first rate with movement of a first region of said magnet relative to said sensor and to cause changes in said Hall effect sensor outputs at a second rate greater than said first rate with movement of a second region of said magnet relative to said sensor.

31. A sensor according to claim 17, wherein at least one of said Hall effect sensors comprises first and second Hall elements; each of said Hall elements providing an associated output in response to a position of said sensor control element relative to said position sensor.

32. A non-contact position sensor system comprising:

a magnet;

a position sensor mounted in a fixed position relative to said magnet, said position sensor comprising a plurality of Hall effect sensors configured in an array on said circuit board; each of said Hall effect sensors configured to provide an associated output in response to a magnetic filed of said magnet; and

a shunt configured to block said magnetic field from a plurality of combinations of said Hall effect sensors, each of said combinations being associated with a different position of said shunt relative to said magnet, whereby said outputs are collectively representative of an associated one of said positions.

33. A system according to claim 32, said system further comprising a U-shaped housing comprising first and second opposed legs and an opening between said first and second legs for receiving said shunt, and wherein said magnet is disposed in said first leg and said Hall effect sensors are disposed in said second leg.

34. A system according to claim 33, said system further comprising a generally U-shaped concentrator having first and second opposed concentrator legs, said first concentrator leg being disposed in said first leg of said housing and said second concentrator leg being disposed in said second leg of said housing, said concentrator thereby providing a flux path for a magnetic field of said magnet from said first housing leg to said second housing leg.

35. A system according to claim 32, said system further comprising a biasing magnet mounted in a fixed position adjacent at least one of said Hall effect sensors for biasing said at least one of said Hall effect sensors to a selected output state.

36. A system according to claim 32, wherein said Hall effect sensors are configured in a linear array.

37. A system according to claim 32, wherein at least one of said Hall effect sensors comprises first and second Hall elements; each of said Hall elements providing an associated output in response to a position of said sensor control element relative to said position sensor.

38. A system according to claim 32, wherein said shunt has a generally arcuate shape.

39. A non-contact position sensor system comprising:

a magnet;

a position sensor mounted in a fixed position relative to said magnet, said position sensor comprising a first plurality of Hall effect sensors configured in a first array and a second plurality of Hall effect sensors configured in a second array; each of said first and second pluralities of Hall effect sensors configured to provide an associated output in response to a magnetic filed of said magnet; and

a first shunt configured to block said magnetic field from a plurality of combinations of said first plurality of Hall effect sensors, each of said combinations of said first plurality of Hall effect sensors being associated with a different position of said first shunt relative to said magnet, whereby said outputs of said first plurality of said Hall effect sensors are collectively representative of an associated one of said positions of said first shunt; and

a second shunt configured to block said magnetic field from a plurality of combinations of said second plurality of Hall effect sensors, each of said

combinations of said second plurality of Hall effect sensors being associated with a different position of said second shunt relative to said magnet, whereby said outputs of said second plurality of said Hall effect sensors are collectively representative of an associated one of said positions of said second shunt.

40. A system according to claim 39, wherein said position sensor comprises a W-shaped housing comprising a middle leg, first and second outside legs, a first opening between said middle leg and said first outside leg for receiving said first shunt, and a second opening between said middle leg and said second outside leg for receiving said second shunt, and wherein said magnet is disposed in said middle leg, said first plurality of Hall effect sensors are disposed in said first leg, and said second plurality of Hall effect sensors are disposed in said second leg.

41. A system according to claim 39 wherein said first shunt comprises first and second separate portions.

42. A system according to claim 39, wherein said first and second arrays are linear arrays.

43. A system according to claim 39, wherein at least one of said Hall effect sensors comprises first and second Hall elements; each of said Hall elements providing an associated output in response to a position of said sensor control element relative to said position sensor.

44. A system according to claim 39, wherein at least one of said first and second shunts has a generally arcuate shape.

45. A method of sensing vehicle seat position comprising:

providing a magnet;

providing a position sensor comprising a plurality of Hall effect sensors configured in an array; each said Hall effect sensor configured to provide an output associated with each of a plurality of positions of said magnet relative to said position sensor, whereby a separate combination of said outputs is provided for each of said positions;

mounting said position sensor and said magnet in said vehicle for relative non-contacting movement therebetween with movement of said seat; and

determining a position of said seat in response to said separate combinations of outputs.

46. A method according to claim 45,wherein said array is a linear array, and wherein said position sensor and said magnet are mounted in said vehicle for substantially parallel movement of said magnet relative to said linear array.

47. A method according to claim 45,wherein said array is a linear array, and wherein said position sensor and said magnet are mounted in said vehicle for substantially perpendicular movement of said magnet relative to said linear array.

48. A method according to claim 45, wherein said magnet is a coded magnet comprising at least one North magnetized region and at least one South magnetized region.

49. A method according to claim 48,wherein said coded magnet comprises adjacent ones of said at least one North magnetized region and said at least one South magnetized region.

50. A method according to claim 48,wherein said at least one North magnetized region and said at least one South magnetized region are configured to cause changes in said Hall effect sensor outputs at a first rate with movement of a first region of said magnet relative to said sensor and to cause changes in said Hall

effect sensor outputs at a second rate greater than said first rate with movement of a second region of said magnet relative to said sensor.

51. A method according to claim 45, said method further comprising providing a biasing magnet in a fixed position adjacent at least one of said Hall effect sensors for biasing said at least one of said Hall effect sensors to a selected output state.

52. A method of sensing vehicle seat position comprising:

providing a magnet;

providing a position sensor comprising a plurality of Hall effect sensors configured in an array; each of said Hall effect sensors configured to provide an associated output in response to a magnetic filed of said magnet;

providing a shunt configured to block said magnetic field from a plurality of combinations of said Hall effect sensors, each of said combinations being associated with a different position of said shunt relative to said magnet, whereby said outputs are collectively representative of an associated one of said positions;

mounting said position sensor in fixed relation to said magnet in said vehicle for non-contacting relative movement between said shunt and said sensor and said magnet with movement of said seat; and

determining said vehicle seat position in response to said outputs.

53. A method according to claim 52, said method further comprising providing a biasing magnet in a fixed position adjacent at least one of said Hall effect sensors for biasing said at least one of said Hall effect sensors to a selected output state.

54. A method according to claim 52, said method further comprising providing a U-shaped housing comprising first and second opposed legs and an opening between said first and second legs for receiving said shunt, and wherein

said magnet is provided in said first leg and said Hall effect sensors are provided in said second leg.

55. A method according to claim 54, said method further comprising providing a generally U-shaped concentrator having first and second opposed concentrator legs, said first concentrator leg being disposed in said first leg of said housing and said second concentrator leg being disposed in said second leg of said housing, said concentrator thereby providing a flux path for a magnetic field of said magnet from said first housing leg to said second housing leg.

56. A system for determining vehicle seat position comprising:

sensor means for providing a plurality outputs in separate combinations; and

control element means for controlling said outputs to provide one of said combinations for each of a plurality of positions of said control element means relative to said sensor means;

said sensor means and said control element means being mounted in said vehicle for non-contacting movement therebetween with movement of said vehicle seat, whereby each of said separate combinations is associated with a different position of said vehicle seat.